

Minutes
Electrical Power Working Group
Friday 21 July 2023
Marriott D/FW Westlake, Westlake, TX

Chairpersons:

Justin Bennett; University of the Incarnate Word; P; U (presiding)
Mitch Hefter; USITT; P; U

Recording secretary:

Richard Nix (ESTA)

Attendees:

Kevin Amick; IATSE Local 479; P; G

James Davey; A.C.T. Lighting, Inc.; P; CP
Rodger Dean; R. Dean Lighting Limited; P; DR
Todd Fouyer; Musson Theatrical; O; DR
Jerry Gorrell; Theatre Safety Programs; P; U
Nick Holmberg; TMB; P; MP
Doug Hook; I.A.T.S.E. Local 58; P; U
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
Hans Lau; I.A.T.S.E. Local 728; A; U
Michael Lay; Candela Controls, Inc; P; G
Bob Luther; Lex TM3; P; MP
Elizabeth E. (Lizz) Pittsley; Elizabeth Pittsley; P; U
Mark Pollock; Littelfuse, Inc.; P; MP
Jason Potterf; Cisco; P; MP
Dietmar Rottinghaus; Neutrik AG Liechenstein; P; MP
Alan M. Rowe; I.A.T.S.E. Local 728; A; U
Mike Skinner; Contract Services Administration Trust Fund; P; U
Steve Terry; Electronic Theatre Controls, Inc.; P; MP
Stephen Vanciel; Stephen Vanciel; I; U
Ken Wagner; Ken Wagner; O; U
Keith S. Woods; IATSE Local 891; P; U

1 Opening remarks

Justin Bennett called the meeting to order at 19:06, welcoming everyone to the meeting. He reminded everyone to mute their microphones, raise hands to indicate a desire to speak, or vote.

2 Patent and anti-trust statements

2.1 Reading of the anti-trust statement

Justin Bennett read the following statement aloud to the assembly:

ESTA and its members take seriously their obligation to comply with all applicable antitrust laws. Therefore, during this meeting and during all ESTA events, all discussions will be limited to those subjects that are permitted by the antitrust laws. All members should refrain from any discussion or mention of competitively sensitive subjects such as the current or future prices charged for any member product or services, current or future marketing plans or strategies, and current or future costs, including employee salaries. There also must be no agreement on the suppliers or customers that members will or will not do business with or the markets in which members will conduct business.

Violations of the antitrust laws can have serious consequences. If you have any questions or concerns about anything that is discussed at an ESTA meeting, please bring your concern to ESTA management. An easy to read pamphlet describing the antitrust laws is available from the ESTA staff.

Richard Nix held up the pamphlet.

2.2 Reading of the call for patents

Justin Bennett read the following statement aloud to the assembly:

ESTA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its standards contain no protected intellectual property.

In keeping with the open disclosures policy, I ask if anyone present wishes to notify this working group of the existence of a patent, patent application, copyright, or other protected intellectual property that might protect material in a standard being developed by this working group. You need not be the holder of the patent or copyright to notify this working group of its existence.

Nothing was revealed.

3 Attendance and Membership

3.1 Requirements for membership

Justin Bennett read the following statement aloud to the assembly:

Membership is open to all parties who are affected by the work of the group; membership in ESTA is not a requirement, but there is a \$100/person/year participation fee to help fund the costs of running the Technical Standards Program. Voting members are required to attend meetings and vote on letter ballots. Any principal member and alternate that both miss three consecutive meetings or letter ballots will have their membership status changed to observer. This action will be taken at the beginning of the first meeting after such inaction and will be recorded in the minutes of that meeting.

3.2 Introduction of attendees and taking attendance

Everyone introduced themselves.

3.3 Determination of quorum

As of 07 July 2023 the consensus body has 22 voters. A quorum would be eight. Supermajority is 12.

Richard Nix confirmed that both requirements were met.

3.4 Processing of new and other membership requests

As of 19 July 2023 the following applications have been received:

*Doug Hook; I.A.T.S.E. Local 58; P; U (new application)
James Davey; A.C.T. Lighting, Inc. (status change request from Observer)
Dietmar Rottinghaus; Neutrik AG Lichtenstein; P; MP (new application)
Nick Holmberg; TMB; P; MP (new application)
Bob Luther; Lex Products (Status change request from Observer)*

Steve Terry moved to approve the applications and change requests, with the exception that those not present and applying for voting status be approved as Observer. The motion was seconded and carried without objection or abstention.

3.5 Changes to observer status due to lack of participation

3.5.1 Changes due to attendance

The following voting members have missed the last two meetings, and will have their voting status changed to Observer if not present today:

*Michael Lay; Candela Controls, Inc
Elizabeth Pittsley; Elizabeth Pittsley
Keith Woods; I.A.T.S.E. Local 891
Simon Hunt; I.A.T.S.E. Local 891
Mark Pollock; Littlefuse, Inc.*

All were present, so no changes made.

3.5.2 Changes due to missed letter ballots

There are none.

3.6 Consensus body

This is the consensus body after today's meeting actions:

Delegate	Representing	Voting status	Int. cat.
James Davey	A.C.T. Lighting, Inc	P	CP
George Long	Aggreko	P	DR
Michael Lay	Candela Controls, Inc	P	G
Jason Potterf	Cisco	P	MP
Mike Skinner	Contract Services Administration Trust Fund	P	U
Matthew Antonucci	Contract Services Administration Trust Fund	A	U
Chris Moulton	Contract Services Administration Trust Fund	A	U
Don Earl	Earl Girls, Inc.	P	DR
Steve Terry	Electronic Theatre Controls, Inc.	P	MP
Wendy Russell	Electronic Theatre Controls, Inc	A	MP
Elizabeth E. (Lizz) Pittsley	Elizabeth Pittsley	P	U
Art Wanuch	Entertainment Electrical Safety Association	P	G
Ian Foulds	Entertainment Electrical Safety Association	A	G
Robert Haycock	Robert Haycock	I	U
Edwin S. Kramer	I.A.T.S.E. Local 1	P	U
Doug Hook	I.A.T.S.E. Local 58	P	U
Charles McIntyre	I.A.T.S.E. Local 728	P	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Hans Lau	I.A.T.S.E. Local 728	A	U
Kevin Amick	IATSE Local 479	P	G
Keith S. Woods	IATSE Local 891	P	U
Simon Hunt	IATSE Local 891	A	U
Bob Luther	Lex Products	P	CP
Mark Pollock	Littelfuse, Inc.	P	MP
Mike Webb	Motion Laboratories, Inc.	P	MP
Rick Montgomery	Motion Laboratories, Inc.	A	MP
Michael Shaw	Motion Laboratories, Inc.	A	MP
Dietmar Rottinghaus	Neutrik AG Lichtenstein	P	MP
Roger Dean	R. Dean Lighting Limited	P	DR
Daniel Swalec	Daniel Swalec	I	U
Nehad El-Sherif	Nehad El-Sherif	I	G
Stephen Vanciel	Stephen Vanciel	I	U
Nick Holmberg	TMB	P	MP
Jerry Gorrell	Theatre Safety Programs	P	U
Justin Bennett	University of the Incarnate Word	P	U

Delegate	Representing	Voting status	Int. cat.
Mitch Hefter	USITT	P	U
	Total votes possible	27	
Subtotals by interest categories	Custom producer (CP):	1	CP
	Designer (DE):	0	DE
	Dealer or rental company (DR):	3	DR
	General interest (G):	4	G
	Mass-market producer (MP):	7	MP
	User (U):	12	U

P = Principal voter; A = Alternate voter; I=Individual voter

4 Approval of the minutes from the previous meeting

See *EPmin04-2023r1_DRAFT.pdf*

Steve Terry moved to approve the minutes. The motion was seconded, but someone noted that the title needs to be changed from agenda to minutes. The motion carried without objection. Mike Lay abstained.

5 Approval of agenda

Robert Haycock moved to approve the agenda. The motion was seconded and carried without objection or abstention.

6 Old business

6.1 ANSI E1.16 – 2002 (R2021) Entertainment Technology – Configuration Standard for Metal Halide Ballast Power Cables

Reaffirmation, revision, or withdrawal by 28 October 2026.

6.2 ANSI E1.19 – 2021, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry

Reaffirmation, revision, or withdrawal by 15 October 2026.

6.3 ANSI E1.24 – 2012 (R2021), pin connectors

Reaffirmation, revision, or withdrawal by 28 October 2026.

6.4 ANSI E1.32 – 2012 (R2022), Guide for the Inspection of Entertainment Industry Incandescent Lamp Luminaires

Reaffirmation, revision, or withdrawal by 11 August 2027.

6.5 ANSI E1.51 – 2018, The Selection, Installation, and Use of Single-Conductor Portable Power Feeder Cable Systems for Use At 600 Volts Nominal or Less for the Distribution of Electrical Energy in the Television, Film, Live Performance and Event Industries in Canada

Revision, reaffirmation, or withdrawal by 7 November 2023.

The working group has one more meeting, after this one, to decide which action to take

Keith Woods said that there are changes coming to the Canadian Electrical Code which will result in changes necessary to this document. He suggested we wait until those changes are confirmed, decide at the next meeting.

6.6 ANSI E1.53 – 2019, Overhead mounting of luminaires, lighting accessories, and other portable devices: specification and practice

Revision, reaffirmation, or withdrawal by 3 June 2024.

6.7 ANSI E1.58 – 2022, Indoor equipment outdoors

Revision, reaffirmation, or withdrawal by 10 August 2027.

6.8 BSR E1.79 – 202x, Television, Film, Live Performance, and Event Electrical Guidelines for Canada

Task group: Art Wanuch (task group leader), Keith Woods, Simon Hunt, Mark Pollock, Rodger Dean, and Steve Vanciel (ESWG liaison)

Any news or action?

Keith Woods said he hasn't had time to review and prepare an update, he'll have one for the next meeting. Roger Dean said they have an extensive draft, they've worked hard to ensure it's a sound basis for a national standard.

6.9 BSR E1.80 – 202x, 19-pin connector pinout assignments

Task group: Hans Lau (leader), Steve Terry, Rodger Dean, Mike Webb, Eddie Kramer, Ian Foulds, Bob Luther, Doug Hook, James Davey, and Dietmar Rottinghaus.

Any news or action?

Hans Lau reported that there has been little time to devote to this. He said he has done some informal polling of industry stakeholders, with mixed opinions. They may decide to make it a recommended practice, or something that makes it sound less mandatory. On the 120 volt side, it's non-controversial, but on the 208v side there are many proprietary standards that create a challenge. It could simply be a catalog of various known pinout assignments.

Steve Terry said if this "catalog" is going to describe various pinouts, it doesn't matter how many there are. He thinks we could do something with this prior to September of this year, which would allow us to make a proposal to the NEC that would include this document as a footnote reference to such a proposal. He doesn't know if it's possible to move that quickly, but it would be very useful if it's possible.

Hans Lau asked if we should actively seek out input, or announce then let others provide feedback on their own.

Mitch Hefter, suggested incorporating a form to allow people to self-report their pinout configurations.

Steve Terry said this will definitely be a living document, so we may need to develop the basic framework of a document, the most current version of which lives on the website.

Ken Wagner asked how the various pinouts would be addressed in the code. There's already an exception for them, said Steve. The advice would be to not plug a type A into a mismatched type B connector.

There are pinouts that are "known safe" but there are industry wide configurations that don't conform. We need a way to identify which is which, and the marking must be available to the end user.

Dietmar Rottinghaus said DIN 15765 (2019) addresses this. It was necessary because some of the connector slots are not tolerated, and different connectors can therefore be mated together, which creates a hazard that the slots were intend to mitigate. It could be used as a reference here. He shared his screen to show examples.

Doug Hook said this is an important issue in Canada, too. They experience what he calls a "spun Soca" – where the insert spins inside of the connector shell, creating a potentially dangerous pin misalignment. His local trains to visually inspect for this by ensuring that the keyway is aligned properly in the shell. He also explained how one company's method for distributing 208v over multicables is identified by red heat-shrink tubing on the break-ins and break-outs.

Steve Terry said the discussion proves the boat has already left the dock in terms of establishing a single, common pinout configuration. The idea is to create the marking system to identify which is which. Past attempts to create a standardized pinout have failed because of the massive existing inventories already in use.

This is an important project. He asked again if there is any way we could have something ready by 01 September? Only if it's not an ANSI document.

Bob Luther said these connectors are not UL listed, only UL recognized, but if the cable is also UL recognized, the entire cable assembly could be a recognized assembly. Steve Terry said this is already in the NEC. Bob Luther volunteered to participate on the task group.

Steve Terry said it may be a pipe dream to expect we can get anything ready by 01 September. We may need to wait until the 2029 cycle. Eddie said if there is commitment, it could be done. Steve Terry thinks its impractical. He would rather work on getting industry ground swell and support in developing the standard, by concentrating on safety marking indicating voltage and type.

Jason Potterf said we could submit two separate PI's, there is precedence for this. The deadline for having a document ready isn't 01 September – that's the deadline for the PI submittal. The deadline for having a document ready is when the code is published. We have time, he thinks.

Hans asked about the 240-volt systems – are they in the 208-volt range or considered a different range.

Doug Hook asked to be on the task group. James Davey asked to be on the task group. He asked if the marking would be on the connector or the cable. Steve Terry said it needs to be on the connector.

Steve Vanciel asked if multicable assemblies ever intentionally changed pinouts from the in side to the out side – not 1-to-1. Steve Terry said in most cases it's pin-to-pin (1-to-1).

Dietmar Rottinghaus said this cannot work in Europe because they require the grounds to be bundled on the inner ring, which doesn't work for audio companies. He also asked to be on the task group

Justin Bennett made it so. The task group is now Hans Lau (leader), Steve Terry, Rodger Dean, Mike Webb, Eddie Kramer, Ian Foulds, Bob Luther, Doug Hook, James Davey, and Dietmar Rottinghaus.

7 New business

8 Other business and announcements

8.1 Above & Beyond Awards

Nominations can be made on the website at http://tsp.esta.org/tsp/news/award_recipients.html.

8.2 IES report

Mitch said there's nothing new to report.

8.3 NEC report

Mitch reported 2026 proposal discussion. 07 September comment deadline. Go to NFPA.org to submit proposals.

8.4 USITT report

Mitch Hefter reported, new fiscal year. Proposals for 2024 conference in Seattle, WA are the hot topic.

Justin Bennett reiterated the Engineering Commission would love for this group to submit proposals.

Steve Vanciel asked about contacting USITT for permission to use or transfer maintenance of RP-1, so it is easily accessible. Mitch said to contact him if they want a copy, and that he would follow up with USITT regarding use and maintenance. Steve Terry cautioned that RP-1 may be superseded by the new 19-pin project.

8.5 Event Safety WG – Electrical Task Group

Any news or action?

Steve Vanciel said there is not a great deal to report. The latest draft is before the ESWG tomorrow, we'll have to see what they say.

9 Schedule for future meetings

The meeting schedule may be found at <http://www.esta.org/ESTA/meetings.php>. The Fall meetings will return the Westlake, TX, the week of 02 October 2023. The Winter meetings will be held in conjunction with the NAMM Show 2024, in Anaheim, CA, during the week of 22 January 2024.

10 Adjournment

The agenda business being complete, there being no new business brought forth, Justin Bennett adjourned the meeting at 20:08.

Electrical Power Working Group Members as of 21 July 2023

Name	Representing	Status	Int cat
Matthew Ardine	I.A.T.S.E. Local 728	A	U
Robert Barbagallo	Solotech Inc.	O	DR
Justin Bennett	University of the Incarnate Word	O	U
Jim Bogdanowicz	CHAUVET & Sons Inc.	O	MP
John David (Javid) Butler	HDR Consulting LLC	P	DE
Tucker Downs	ROE Visual USA	P	MP
Bill Ellis	Candela Controls, Inc.	O	U
Robert Goddard	Goddard Design Co.	O	CP
Nicolas Goerg	Rosco Laboratories	O	CP
Jerry Gorrell	Theatre Safety Programs	P	U
Robert Graham	Wenger Corporation	O	DR
Tim Hansen	Oasis Stage Werks	O	U
Robert Haycock	Robert Haycock	I	U
Mitch Hefter	Signify	A	MP
Ed Hyatt	Boston Illumination Group	O	CP
Frank Kjær Jensen	Harman International Industries	O	MP
Timothy S. Kang	ASC, Motion Imaging Technical Council	O	CP
Hans Lau	I.A.T.S.E. Local 728	P	U
Michael Lay	Candela Controls, Inc	P	DR
Wendy Luedtke	Electronic Theatre Controls, Inc.	P	MP
Jason Osterman	SGM Lighting, Inc	O	MP
Martin Palmer	Signify	P	MP
Mark Primrose	CHAUVET & Sons Inc.	O	MP
Huang Qiancheng	Guangzhou Haoyang Electronic Co., Ltd.	O	CP
Karl G. Ruling	Unit 12 Productions	I	DE
Steven J. Rust	Theatre Projects Consultants, Inc.	P	DE
Nick Saiki	ADJ Products, LLC	P	MP
Ford Sellers	Chauvet Lighting	O	MP
Keith Sklar	Actors' Equity Association	O	G
Robert Timmerman	Signify	O	MP
Mike Wood	Mike Wood Consulting LLC	P	G
Lijuan Zhang	Guangzhou Haoyang Electronic Co., Ltd.	O	CP